National Institute of Environmental Health Sciences

Cylindrospermopsin: A decade of progress on bioaccumulation research

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Abstract:

Cylindrospermopsin (CYN) is rapidly being recognised as one of the most globally important of the freshwater algal toxins. The ever-expanding distribution of CYN producers into temperate zones is heightening concern that this toxin will represent serious human, as well as environmental, health risks across many countries. Since 1999, a number of studies have demonstrated the ability for CYN to bioaccumulate in freshwater organisms. This paper synthesizes the most current information on CYN accumulation, including notes on the global distribution of CYN producers, and a précis of CYN's ecological and human effects. Studies on the bioaccumulation of CYN are systematically reviewed, together with an analysis of patterns of accumulation. A discussion on the factors influencing bioaccumulation rates and potential is also provided, along with notes on detection, monitoring and risk assessments. Finally, key gaps in the existing research are identified for future study.

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Resource Description

Early Warning System: ☒

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure : ☒

weather or climate related pathway by which climate change affects health

Food/Water Quality

Food/Water Quality: Biotoxin/Algal Bloom

Geographic Feature: ☒

resource focuses on specific type of geography

Freshwater

Geographic Location: ☒

resource focuses on specific location

Global or Unspecified

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease: Marine Toxin Syndrome

Resource Type:

format or standard characteristic of resource

Review

Timescale:

time period studied

Time Scale Unspecified